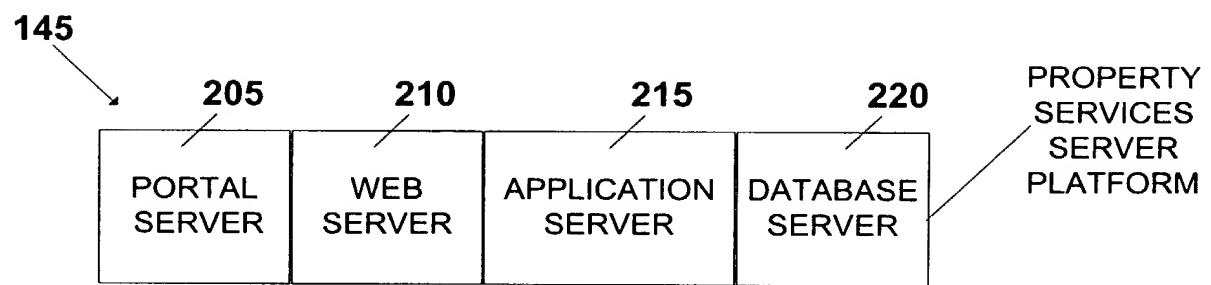
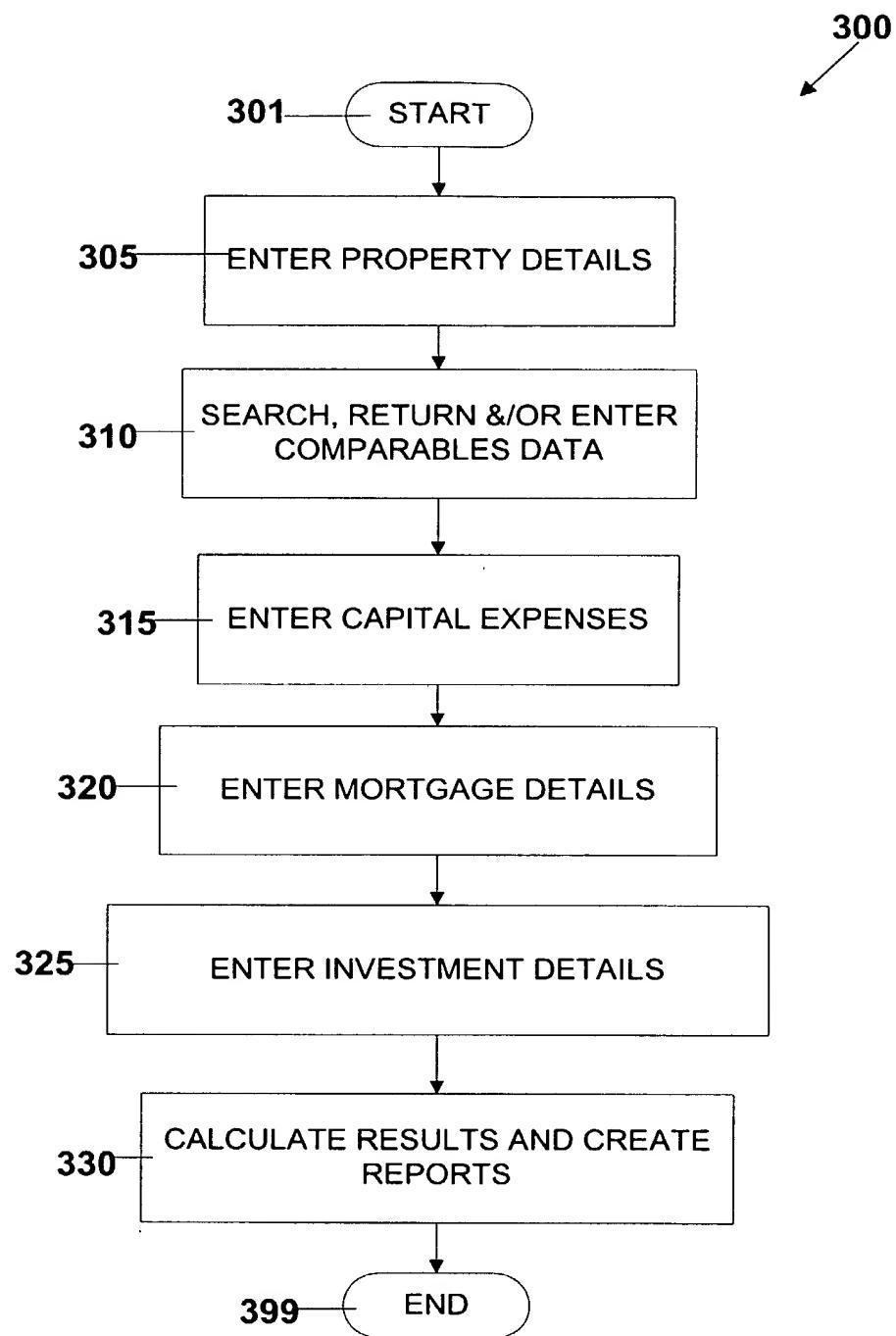


Fig. 1

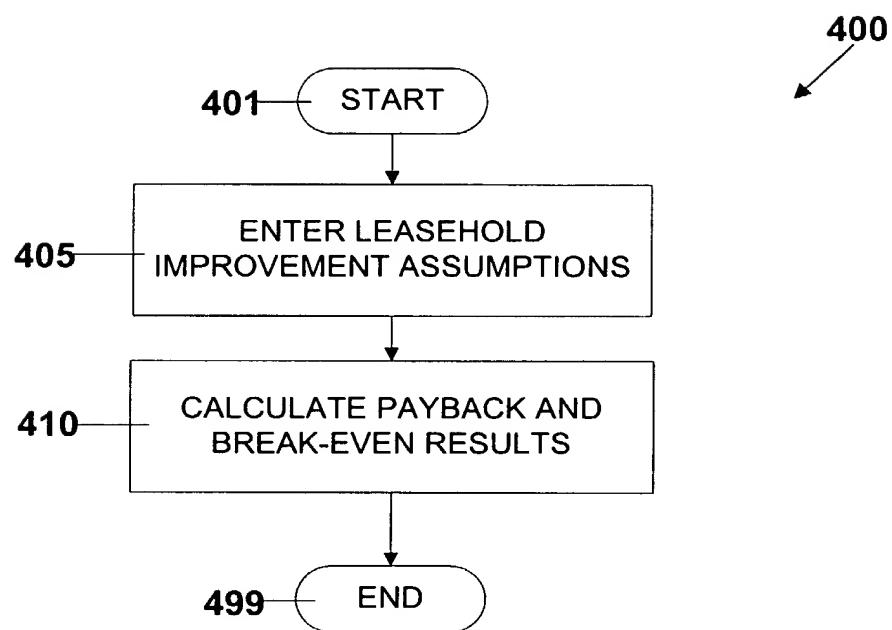
**FIG. 2**



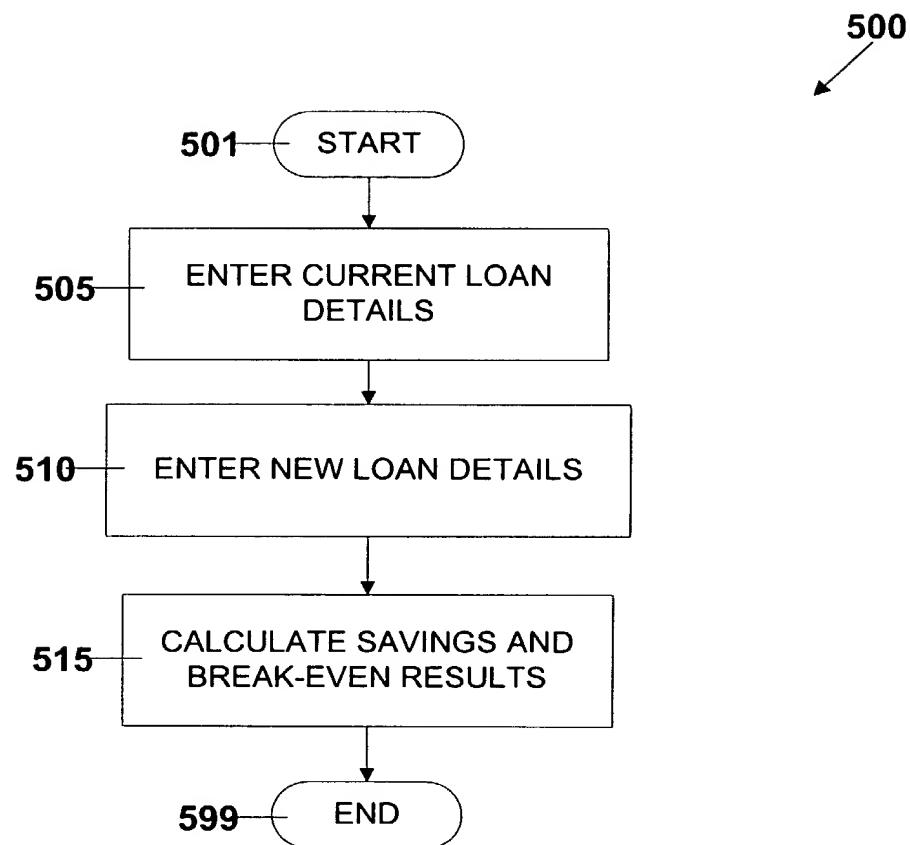
**FIG. 3**



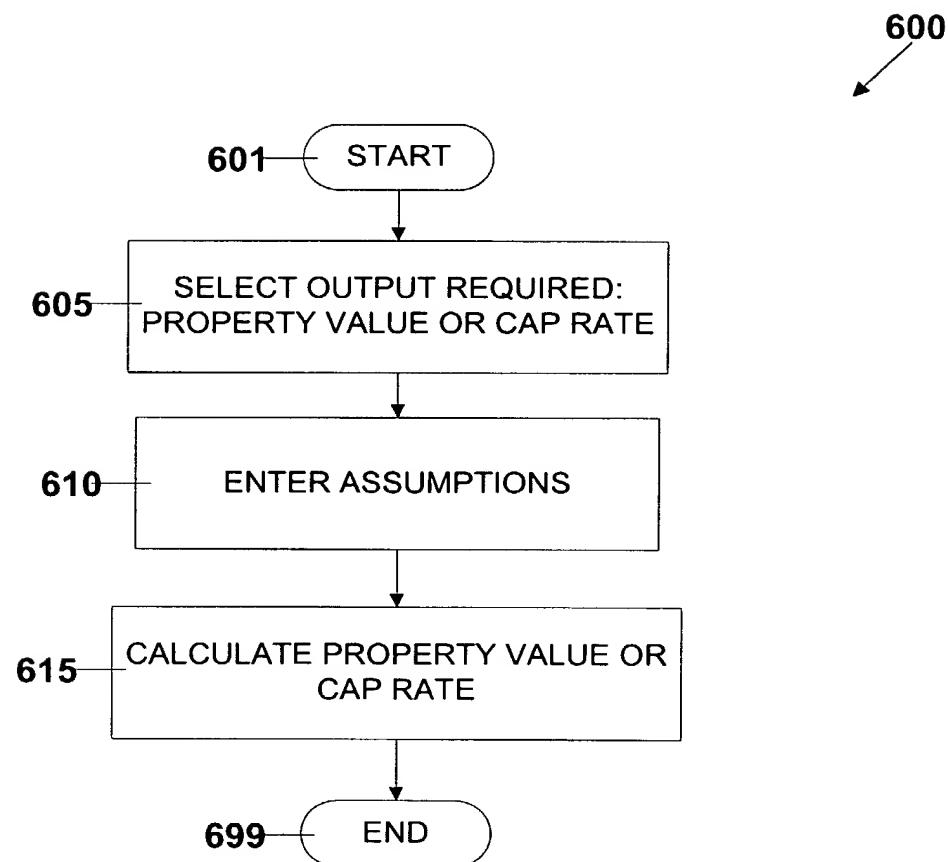
**FIG. 4**



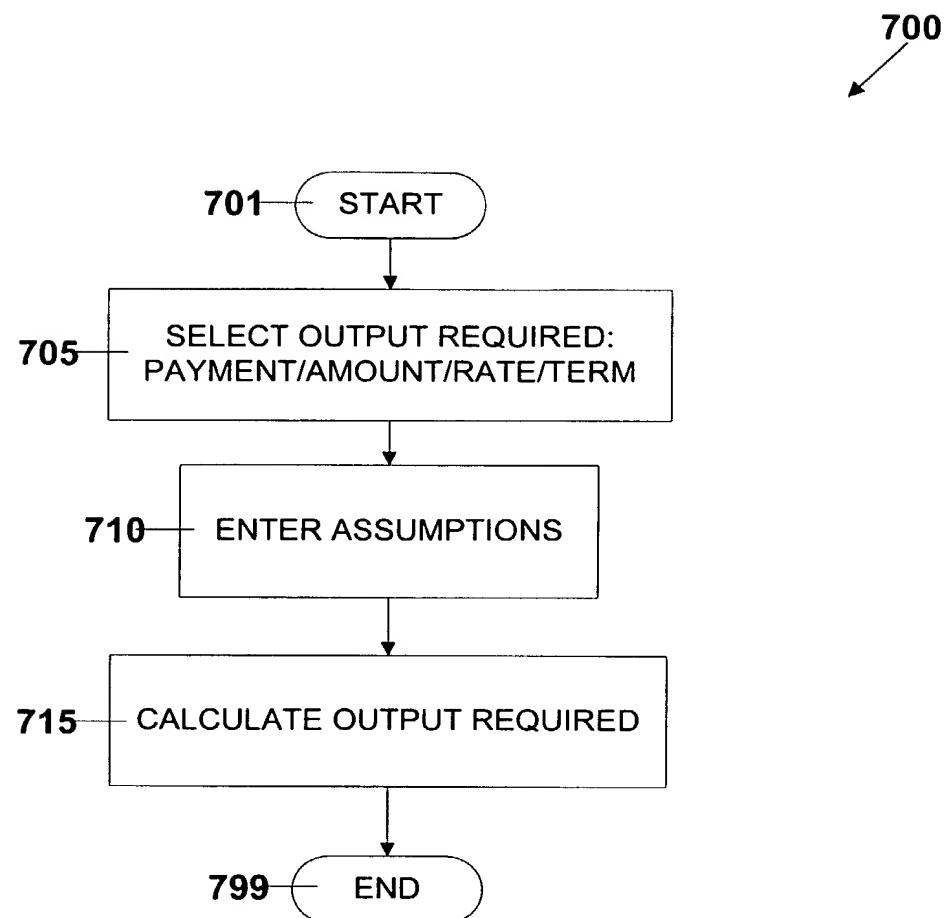
**FIG. 5**



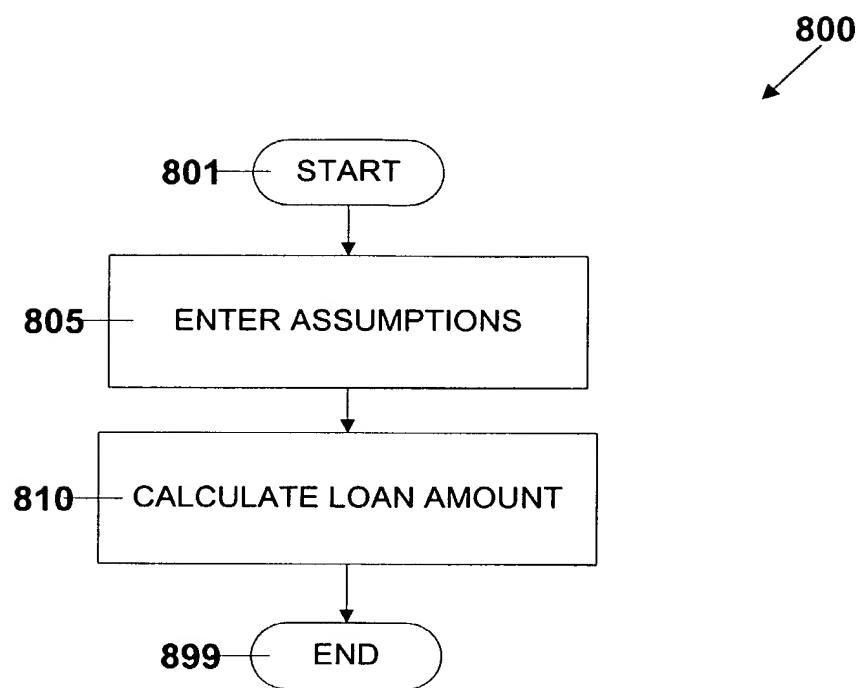
## FIG. 6



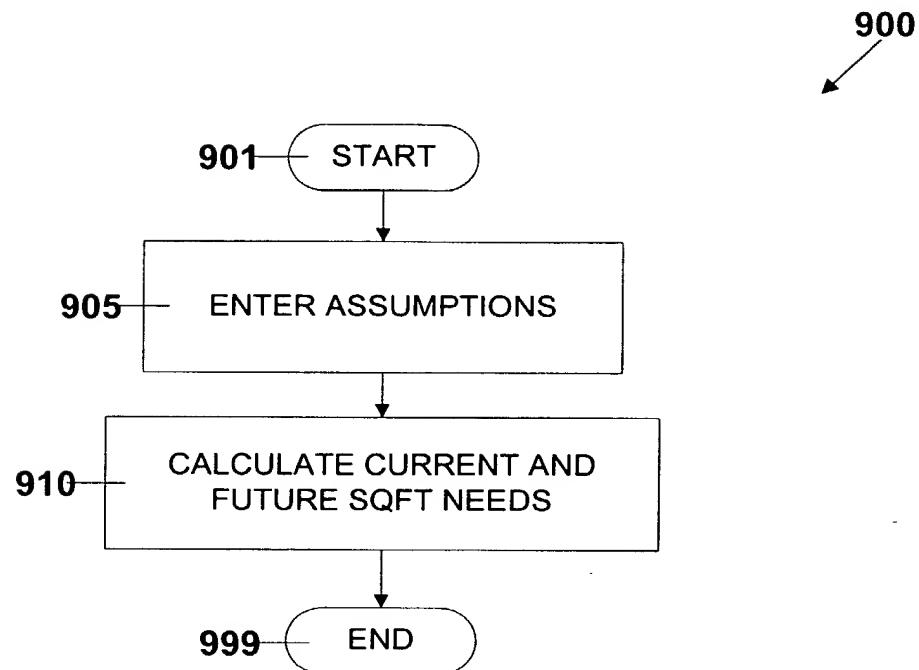
**FIG. 7**



**FIG. 8**



**FIG. 9**



**FIG. 10**



**FIG. 11**

1100



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Address	Market	Submarket	Economics	Dates
Addison Office	Market	Submarket	Economics	4/17/00
James Mall	Market	Submarket	Economics	4/17/00
Smith Warehouse	Market	Submarket	Economics	4/13/00

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Willow Run - Scene 1	Valuation 4/15
Willow Run - Scene 2	Valuation 4/21

**My Market Tracker**

Past Vac	Vac Rate	Curv	Vac Rate
NY Office	10%	9%	9%
Stamford Retail	8%	6%	6%
NY Apt.	7%	7%	7%
Boston Office	5%	7%	7%
Boston Office	8%	8%	8%

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- [Long-term rates on rise](#)
- [Deals of the Day](#)
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- [HUD's help](#)
- [HOMS drops again](#)
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- [Pivotal and Heller Financial Agree to Jointly Develop a B2B Financial Services Web Exchange](#)
- [Sony Financial Services Launches Consumer](#)

**My Economic Indicator/Rates**

Fed Funds	5.81	↑ + 0.02
2-M Libor	6.28	↑ + 80.02
Prime	9.00	↑ + 144.02
DJIA	11287.08	↑ + 100.60
NASDAQ	4055.00	↓ - 132.30
S&P 500	1500.59	↓ - 3.87
30-YR	5.77	↑ + 0.08

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- [Prepayment Calculator](#)

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**My Mortgage Spreads**

Collateral Type	Min DSC	Max LTV	Spread	Spread Sqr
Multifamily	1.2	70	230	8.5
Office	1.1	80	250	9.2
Retail	1.2	75	250	9.2

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- [Get Directions](#)
- [Get Listings](#)

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v2.1 Last updated 9/21/2000

**FIG. 12**



# FIG. 13

1300

1305

1310

1315

**payback calculators**

To help you quickly calculate payback on a property, Realworkspace has provided the following payback calculators. Explore various scenarios in real time by changing the data you enter. Click on a link below for the calculator you need.

At Realworkspace, your privacy and security are top priorities. Your individual information submitted here will never be distributed or sold. Please view our [privacy statement](#) for full details.

■ **[leasehold improvements payback calculator](#)**

Use the Leasehold Improvement Payback Calculator to calculate your payback and the breakeven points of making capital improvements to a property.

■ [Leasehold Improvement Payback Calculator](#)

■ **[refinance / breakeven calculator](#)**

Calculate the savings and breakeven point when refinancing with the Refinance / Breakeven Calculator.

■ [Refinance / Breakeven Calculator](#)

■ **[direct capitalization calculator](#)**

Use the Direct Capitalization Calculator to determine the value of a property based on its income and a given capitalization rate - or determine the capitalization rate based on its income and a given sales price.

■ [Direct Capitalization Calculator](#)

**FIG. 14**

1400

The screenshot shows a web browser window with the URL [www.realworkspace.com](http://www.realworkspace.com) in the address bar. The page title is "realworkspace". The menu bar includes "File", "Edit", "View", "Favorites", "Address", "Go", "privacy", "help", "search", "tools", and "community". On the left, there is a sidebar with various links and a "cash flow calculators" dropdown menu. The main content area is titled "cash flow calculators" and contains text about mortgage and affordability calculators. It includes links for "mortgage calculator" and "affordability calculator". The page is marked with several numbers: "1400" at the top right, "1405" on the left sidebar, and "1410" on the left sidebar.

1400

1405

1410

**realworkspace**

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**cash flow calculators**

To help you calculate cash flow on a property, Realworkspace has created the following mortgage and affordability calculators. Explore various scenarios in real-time by changing the data you enter. Click on a link below for the calculator you need.

**mortgage calculator**

The Mortgage Calculator will help you quickly calculate mortgage payments on a fixed or variable commercial loan, as well as the principal and interest payments over the term of a loan.

■ [Mortgage Calculator](#)

**affordability calculator**

The Affordability Calculator will help you determine the size of the commercial real estate loan you can afford by calculating the loan amount based on Net Operating Income (NOI) and basic underwriting criteria.

■ [Affordability Calculator](#)

**FIG. 15a**

15a00

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valuation tool

Begin by indicating if you will be purchasing, selling or refinancing this property. Then select the level of detail you wish to receive based on the amount of information you have.

Before you begin, you will need the following information to value the property:

- zip code
- property type
- square footage
- expenses
- capital expenditures

If you currently have a mortgage on the property, please have the mortgage terms available.

**value property**

I want to:

modify an existing property valuation  
 value a new property

The level of detail I need is:

quick  
 basic  
 detailed

**continue**

15a05  
15a10  
15a15

**FIG. 15b**

15b00

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modifying an existing valuation

Existing valuations can be selected for modification, or, if you want to keep multiple versions of a valuation, use the copy function to start a new version.

select a valuation

Action	Property Number	Property Name	Property Address	Property Type	Version	Last Update
--------	-----------------	---------------	------------------	---------------	---------	-------------

back

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# FIG. 15c

15c00

15c05

15c10

15c15

15c20

15c25

15c30

15c35

15c40

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step 1 for a property valuation

Start our easy 6-step valuation process by entering the property details below. When you click on "continue," your entries will be saved and you'll be taken to the next step in the process. Click on "previous page" to return to the previous step, the information you've entered on the present page will be retained. At any time during the valuation process, click on "save" to save your work. Resume your property valuation later without losing any of your data.

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1 property details 2 operating data 3 capital expenses 4 mortgage 5 investment 6 valuation outputs

enter property details

\* Indicates a required field

Valuation Description

Valuation Purpose:  I am valuing a property that I want to purchase  I am valuing a property that I want to sell  I am financing or refinancing a property I currently own

\* Version: \_\_\_\_\_ \* Holding Period: \_\_\_\_\_

Property Type

\* Property Type:  \* Property Subtype:    
 Building Class:

Property Name and Address

Property Number: 12345678  
\* Property Name: Oracle Building  
Address Line 1: 3 Bethesda Metro  
Address Line 2: Suite 100  
City: Bethesda  
State: Maryland  
\* Zip Code: 20800  
Metro Area: DALLAS TX

Property Details

Year Built: 2000 Year Renovated: \_\_\_\_\_  
Gross Square Footage: 25,000 SF \* Rentable Square Footage: 22,000 SF  
Number of Tenants: 10

back save continue

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**FIG. 15d**

15d00

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step 2 for a property valuation

In this step of the valuation process, enter operating income and expense data below. The  will provide you with market information. Click  to go to a more detailed level, and click  to go to a more summarized level. Remember, you can click on "save" to save your work at any time.

1 property details    2 operating data    3 capital expenses    4 mortgage    5 investment    6 valuation outputs

enter operating data

Line Item	%	\$	\$ per SF/Unit	Growth
Potential Gross Income		\$4,075,000.00	\$185.23	  0.00%
Less Vacancy and Credit Loss	5.00%	\$203,750.00	\$9.26	 
<b>Effective Gross Income</b>		<b>\$3,871,250.00</b>	<b>\$175.97</b>	
Operating Expenses		\$1,650,000.00	\$75.00	  0.00%
<b>Net Operating Income</b>		<b>\$2,221,250.00</b>	<b>\$100.97</b>	

5d05  
5d10  
5d15  
5d20  
5d25

back save continue 

**FIG. 15e**

15e00

step 3 for a property valuation

In this step, enter any capital expenses such as a leasing commission, tenant improvements, or capital reserves. Click on "save" to save your work.

**1** property details   **2** operating data   **3** capital expenses   **4** mortgage   **5** investment   **6** valuation outputs

enter capital expenses

• Indicates a required field

We can estimate tenant improvements and leasing commissions using one of three methods:

Quick    Basic    Detail

**15e05** — Tenant Improvements   \$   \$ per SF/Unit  
Average Tenant Improvements per Year:   

**15e10** — Leasing Commissions  
Average Leasing Commissions per Year:   

**15e15** — Capital Reserves  
Average Capital Reserves per Year:   

**back** **save** **continue**

**FIG. 15f**

15f00

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valuation tool

step 4 for a property valuation

Next, enter your mortgage details below. You may enter information for up to three loans.

1 property details 2 operating data 3 capital expenses 4 mortgage 5 investment 6 valuation outputs

enter mortgage details

Mortgages Summary

Action #	Loan Amount	Interest Rate	Rate Type	Payment	Payment Frequency	Start Month/Year	Loan Term
				new mortgage	continue		
15f05	15f10			15f20	15f25	back	save
						15f30	15f35

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15f15

# FIG. 15g

15g00

In step five of the valuation process, enter information about your investment profile and your assumptions about the future sale of the property. Click  to view market data.

**1 property details    2 operating data    3 capital expenses    4 mortgage    5 investment    6 valuation outputs**

[enter investment profile](#)

• Indicates a required field

**15g05 Discount Rate**

**15g10** Discount Rate to Apply to Estimated Future Cash Flows:  

**15g15** Holding Period: **1 Years**

**15g20 Purchase of Property**

**15g25** • Contract Purchase Price:

**15g30** Transaction Costs as a Percent of Purchase Price:

**15g35** Fees for Purchase:

**15g40 Future Sale of Property**

**15g45** Transaction Costs as a Percent of Future Sale:

**15g50** Fees for Future Sale:

You can estimate future value using one of these methods:

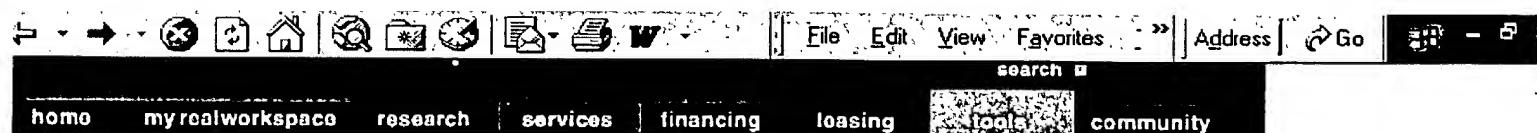
Future Value of Asset at time of Sale      •

Annual Growth Rate from Original Purchase Price

Capitalization Rate to Apply to Estimated Net Operating Income For the 1st Year After Sale

# FIG. 15h

15h00

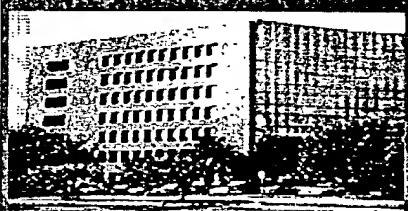


step 6 for a property valuation

Here is a summary of your inputs. Choose the reports you'd like to view. Once you've displayed the report, click on the "print" icon to print that report.

- 1** property details
- 2** operating data
- 3** capital expenses
- 4** mortgage
- 5** investment
- 6** valuation outputs

valuation report



**Oracle Building**  
Bethesda Metro  
Suite 100  
Bethesda, MD 20801

Property At a Glance	
Property Type:	Office
Property Subtype:	Downtown
Building Class:	A
Year Built:	2000
Year Renovated:	
Gross Sq. Ft.:	25,000 SF
Rentable Sq. Ft. or Units:	22,000 SF
Number of Tenants:	10
Occupancy:	NAV
Top 3 Tenants:	NAV, NAV, NAV
Contract Purchase Price:	\$200,000
Price / Rentable SF:	\$9.09

Reports format requires Adobe Acrobat Reader. To download click the Adobe button



15h05

Based on the following assumptions run on 11-15-2000 02:55 PM date:

Generation 1 or 2 with third party

inputs (PERMISSIONS)

# FIG. 15h

(cont.)

15h00

Customer Inputs

1 Effective Gross Income (Yr1)	\$3,871,250	\$/sf	Realworkspace Benchmark	
2 Operating Expenses (Yr1)	\$1,650,000	\$75.00	From (\$/sf) To (\$/sf)	
3 Capital Expenditure (Yr1)	\$800,000	\$36.36	\$0.73 \$5.31	
4 Net cash Flow Before debt Service	\$1,421,250	\$84.60	\$5.08 \$9.25	
5 Discount Rate	5%		\$36.36 \$36.36	
6 Terminal Cap Rate	0.00%		(\$31.71) (\$40.30)	
7 Direct Cap Rate	710.625%			
8 Purchase Price	\$200,000	\$9.09		
9 Terminal Value	\$300,000	\$13.64	\$9.09 \$9.09	
10 Loan to Value	0		\$13.64 \$13.64	
11 Sales per Unit (Apartments - only)				
12 Gross Rent Multiplier (Apartments - only)				
Present Value of R.E. Assets:	Net Cash Flow before Debt Service	\$1,605,952	\$73.00	(\$18.73) (\$26.91)
	Net Operating Income (NOI)	\$2,367,857	\$107.63	\$15.90 \$7.72

Performance Ratio Summary

Customer Inputs	NPV	\$ per Square Foot	IRR	Realworkspace Benchmark
Net Cash Flow before Debt Service	\$1,375,952	\$73.00	633.15217%	From (\$/sf) To (\$/sf)
Net Cash Flow after Debt Service	\$1,375,952	\$107.63	633.15217%	(\$18.73) (\$26.91)
NOI Yield	NOI / Purchase Price	9.8576	9.8576	\$15.90 \$7.72
Levered Cash on Cash return	Cash Flow after ADS / Total Equity	6.1793	6.1793	(Year1) (Year1)
Debt Service Coverage ratio	NOI / ADS	Infinite	NaN	0.4448 -0.3769
Loan to Value	Net Cash Flow / ADS	Infinite	NaN	-3.0335 -3.8551
Expense Ratio	Loan Amount / Property Value	0	0	Infinite Infinite
	Operating Expense / Potential Gross Income	0.4040	0.4040	0 0
		0.5221	0.7539	

15h10

15h15

15h20

# FIG. 16a

16a00

The Leasehold Improvement Payback Calculator calculates the payback and breakeven points when you make capital improvements to a property. Start by filling in the information below, then click "calculate". If you have questions about this tool, click on the "explanation" tab above.

leasehold improvement payback calculator

<b>16a05</b>	What is the square footage for this lease?	<b>10,000 SF</b>
<b>16a10</b>	What is the average annual base rental rate?	<b>Per Square Foot</b> <b>\$100.00</b>
<b>16a15</b>	What is the lease term?	<b>10 Years</b> <b>0 Months</b>
<b>16a20</b>	What is the building standard improvements amount per square foot?	<b>\$10.00</b>
<b>16a25</b>	What is the annual interest rate for financing the building standard improvements?	<b>10%</b>
<b>16a30</b>	Are there above standard improvements?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>16a35</b>	What is the above standard improvements amount per square foot?	<b>\$15.00</b>
<b>16a40</b>	What is the annual interest rate for financing the above standard improvements?	<b>5%</b>
<b>16a45</b>	What is the annual interest rate you are charging the tenant for above standard improvements?	<b>6%</b>

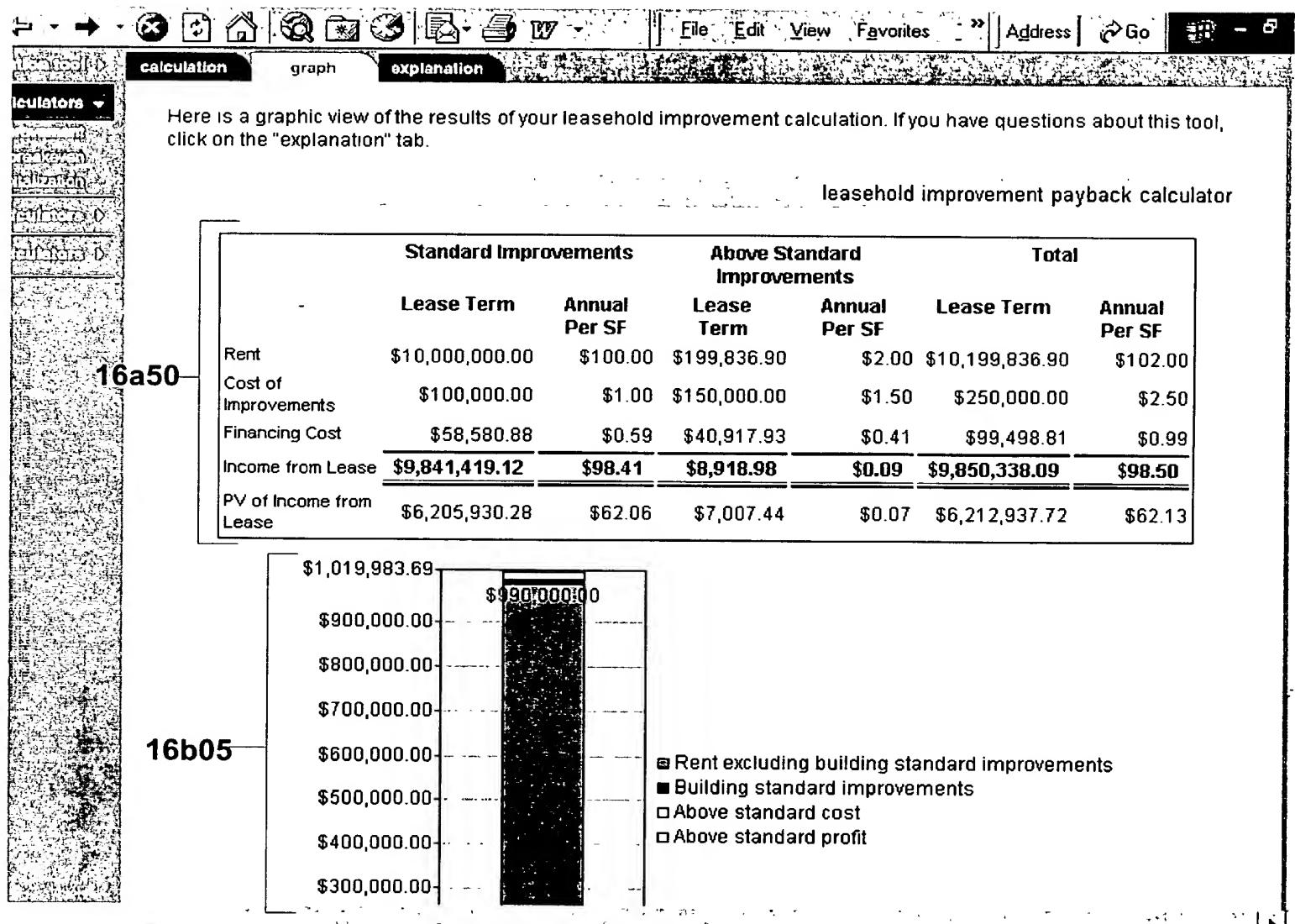
**16a50**

	Standard Improvements		Above Standard Improvements		Total	
	Lease Term	Annual Per SF	Lease Term	Annual Per SF	Lease Term	Annual Per SF
Rent	\$10,000,000.00	\$100.00	\$199,836.90	\$2.00	\$10,199,836.90	\$102.00
Cost of Improvements	\$100,000.00	\$1.00	\$150,000.00	\$1.50	\$250,000.00	\$2.50
Financing Cost	\$58,580.88	\$0.59	\$40,917.93	\$0.41	\$99,498.81	\$0.99
Income from Lease	<b>\$9,841,419.12</b>	<b>\$98.41</b>	<b>\$8,918.98</b>	<b>\$0.09</b>	<b>\$9,850,338.09</b>	<b>\$98.50</b>
PV of Income from Lease	\$6,205,930.28	\$62.06	\$7,007.44	\$0.07	\$6,212,937.72	\$62.13

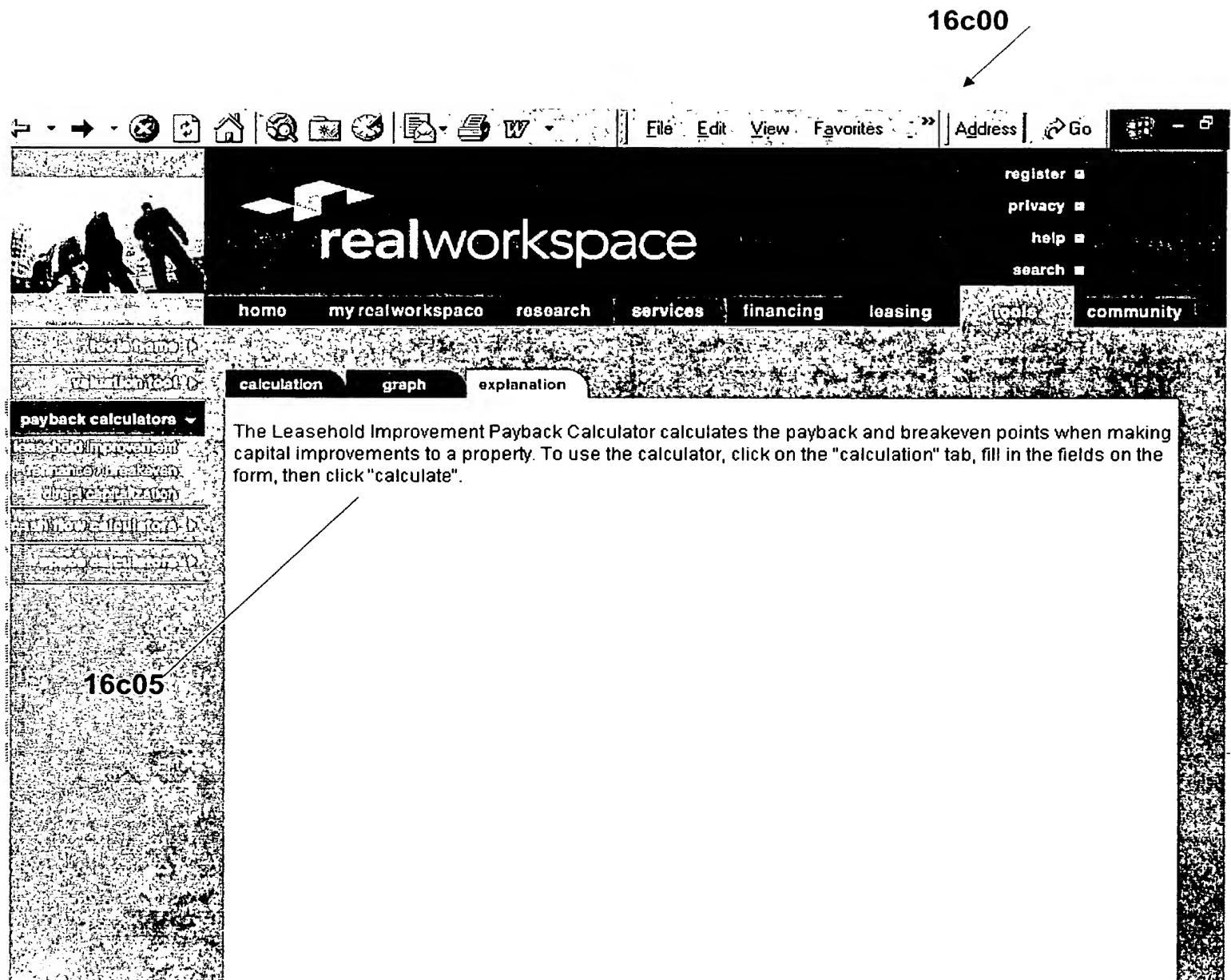
clear calculate

# FIG. 16b

16b00



## FIG. 16c



## FIG. 17a

17a00

The Refinance / Breakeven Calculator helps you calculate refinance loan savings and breakeven points to determine whether it's worth refinancing in today's market conditions. Enter information about your current loan into the fields below and click "calculate" to display the remaining loan term. Next click the "new loan" tab to enter information about a new loan scenario. If you have questions about this tool, click on the "explanation" tab above.

refinance / breakeven calculator

17a05 What type of mortgage do you have?

17a10 What type of amortization are you using?

17a15 What is the current loan balance?

17a20 What annual interest rate are you paying now?

17a25 What is the remaining term?

17a30 What is the payment frequency for your current loan?

17a35 What is the payment amount for your current loan?

17a40 \* Calculated remaining term:

17a45 What prepay penalties will be paid as a percentage of balance?

17a50 What prepay penalties will be paid as an amount?

\* The comparison analysis will utilize the calculated remaining term.

clear calculate

## FIG. 17b

17b00

The Refinance / Breakeven Calculator helps you calculate refinance loan savings and breakeven points to determine whether it is worth refinancing in today's market conditions. After you've entered information about your existing loan, continue by entering information about a new loan into the fields below. Click "calculate" to display the new payment amount. When you're ready, click on the "results" tab above to display the breakeven point and cumulative savings. To return to the calculation for a current loan, click the "current loan" tab. If you have questions about this tool, click on the "explanation" tab.

**refinance / breakeven calculator**

<b>17b05</b>	What type of mortgage are you considering?	<input type="button" value="Fixed Rate"/>
<b>17b10</b>	What type of amortization should we use?	<input type="button" value="Full Amortization"/>
<b>17b15</b>	Current loan balance:	<input type="text" value="\$100,000.00"/>
<b>17b20</b>	Additional loan amount:	<input type="text" value="\$100,000.00"/>
<b>17b25</b>	What points and fees as a % are financed?	<input type="text" value="5%"/>
<b>17b30</b>	What fees as an amount are financed?	<input type="text" value="\$0.00"/>
<b>17b35</b>	Total new loan amount:	<input type="text" value="\$205,000.00"/>
<b>17b40</b>	What is the annual interest rate?	<input type="text" value="7%"/>
<b>17b45</b>	What is the new loan term?	<input type="text" value="30 Years"/>
<b>17b50</b>	What is the new payment frequency?	<input type="button" value="Monthly"/>
<b>17b55</b>	Payment:	<input type="text" value="\$1,363.86"/>
<b>17b60</b>	What points and fees as a % are not financed?	<input type="text" value="0%"/>
<b>17b65</b>	What fees as an amount are not financed?	<input type="text" value="\$0.00"/>
<b>17b70</b>	Do you want to calculate a payoff amount?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>17b75</b>	How many years do you plan to own the property?	<input type="text" value="10"/>
<b>17b80</b>	Payoff amount:	<input type="text" value="\$175,916.02"/>

**clear calculate**

**FIG. 17c**

17c00

17c05

17c10

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current loan new loan results graph explanation

Here are the results of your Refinance / Breakeven calculation. To see the results in a graphic format, click on the "graph" tab.

refinance / breakeven calculator

Based on the loan term:

Compare	Current Loan	New Loan	Savings/ (Costs)	Present Value
Loan amount	\$100,000.00	\$205,000.00	--	--
Total Payment:	\$216,000.00	\$490,989.60	(\$274,989.60)	(\$82,450.24)
Points and Fees Unfinanced:	\$2,000.00	\$0.00	\$2,000.00	\$2,000.00
Total Savings:			<u>(\$276,989.60)</u>	<u>(\$84,450.24)</u>
Rate:	10%	7%		
Term:	216 Months (18 Years)	360 Months (30 Years)		
Payment:	\$1,000.00	\$1,363.86		(\$363.86)

Total Points and Fees Financed: \$10,000.00  
Total Points and Fees Unfinanced: \$2,000.00

Breakeven  
-27.48 Payments  
-5.5 Payments

\* The calculated remaining term is used in the comparison analysis

Based on the payoff term:

Compare	Current Loan	New Loan	Savings/ (Costs)	Present Value
Loan amount:	\$100,000.00	\$205,000.00	--	--
Total Payment:	\$120,000.00	\$163,663.20	(\$43,663.20)	(\$82,450.24)
Points and Fees Unfinanced:	\$2,000.00	\$0.00	\$2,000.00	\$2,000.00
Total Savings:			<u>(\$45,663.20)</u>	<u>(\$84,450.24)</u>
Rate:	10%	7%		
Term:	120 Months (10 Years)	120 Months (10 Years)		
Payment:	\$1,000.00	\$1,363.86		(\$363.86)

FIG. 17d

17d00

17c05

17c10

17d05

realworkspace

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current loan new loan results graph explanation

Here are the results of your Refinance / Breakeven calculation. To see the results in a graphic format, click on the "graph" tab.

refinance / breakeven calculator

Based on the loan term:

Compare	Current Loan	New Loan	Savings/ (Costs)	Present Value
Loan amount	\$100,000.00	\$0.00	--	--
Total Payment	\$216,000.00	\$490,989.60	(\$274,989.60)	(\$82,450.24)
Points and Fees Unfinanced	\$2,000.00	\$0.00	\$2,000.00	\$2,000.00
Total Savings			<u>(\$276,989.60)</u>	<u>(\$84,450.24)</u>
Rate:	10%	7%		
Term:	216 Months (18 Years)	360 Months (30 Years)		
Payment:	\$1,000.00	\$1,363.86	(\$363.86)	

Break-even

Total Points and Fees Financed \$10,000.00 -27.48 Payments  
Total Points and Fees Unfinanced \$2,000.00 -5.5 Payments

The calculated remaining term is used in the comparison analysis.

Based on the payoff term:

Compare	Current Loan	New Loan	Savings/ (Costs)	Present Value
Loan amount	\$100,000.00	\$205,000.00	--	--
Total Payment:	\$120,000.00	\$163,663.20	(\$43,663.20)	(\$82,450.24)
Points and Fees Unfinanced	\$2,000.00	\$0.00	\$2,000.00	\$2,000.00
Total Savings			<u>(\$45,663.20)</u>	<u>(\$84,450.24)</u>
Rate:	10%	7%		
Term:	120 Months (10 Years)	120 Months (10 Years)		
Payment:	\$1,000.00	\$1,363.86	(\$363.86)	

\$103,000.00

\$90,000.00

\$80,000.00

\$70,000.00

\$60,000.00

\$50,000.00

\$40,000.00

\$30,000.00

\$20,000.00

\$10,000.00

\$-2,000.00

0 22 48 75 106 141 176 211 247 282 317 352

Period

■ NPV of Cash Flows  
■ NPV Considering Liability

FIG. 17e

17e00

Use the Mortgage calculator to enter mortgage data associated with the property. Below, each of the questions on this screen is discussed in detail.

Calculate loan amount, interest rate, payment amount or term. All the fields that appear on the screen are required. The fields that are being calculated for you are shown in red.

**note:** *This calculator assumes monthly compounding. This calculator does not consider private mortgage insurance (PMI), insurance, homeowners costs or tax implications.*

**What type of mortgage are you considering?**

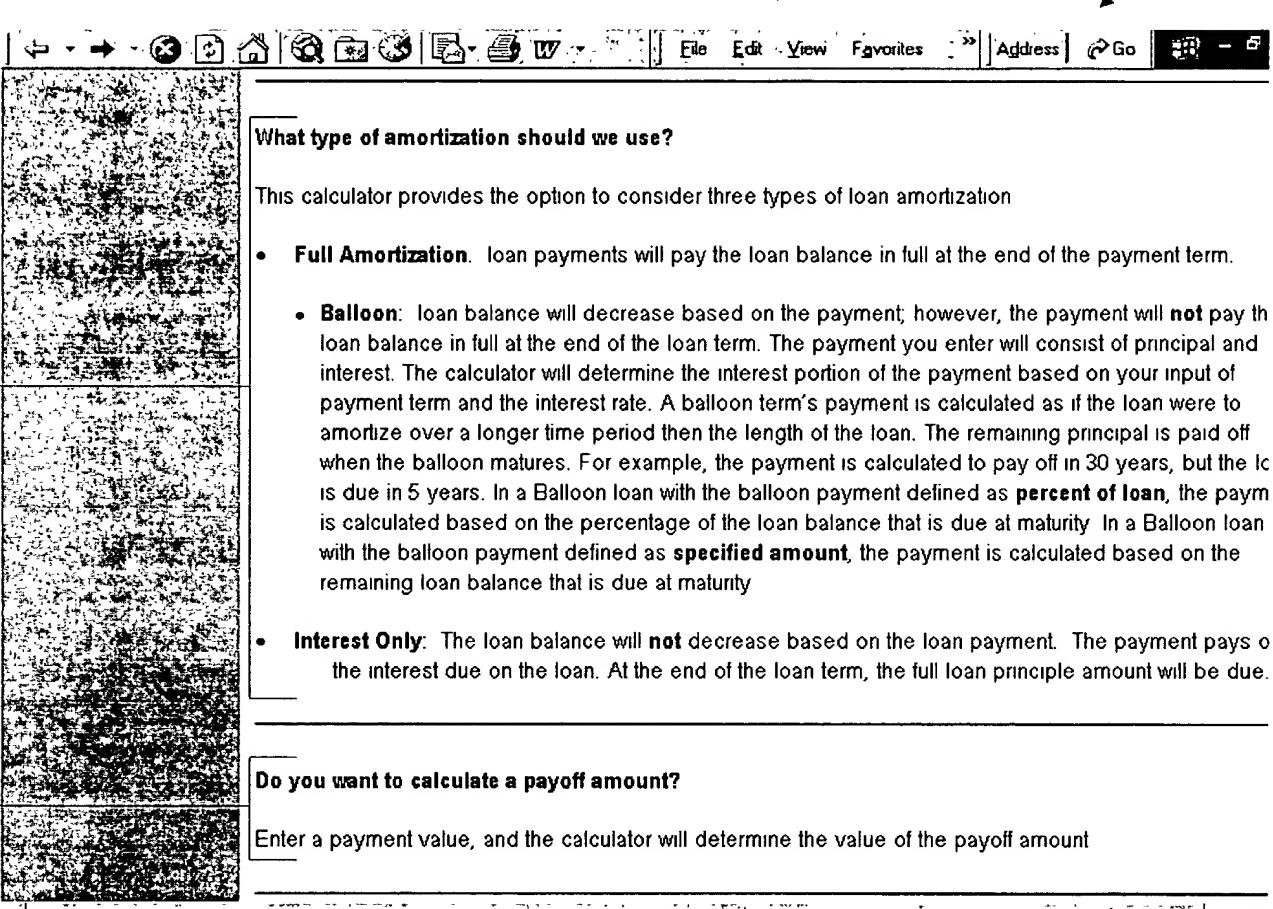
You may choose either of two different types of mortgage rates, variable or fixed

- **Fixed rate:** interest rate remains constant for the term of the loan
- **Variable rate** interest rate changes over the term of the loan. The calculator assumes that the rate will be based on an index with scheduled rate changes, that is, after a specified number of periods at with a specified number of periods between adjustments. While it is not possible to know what the interest will be after an adjustment, this calculator allows you to simulate scenarios based on your assumptions. For further information, refer to the Variable Rate Loan section below.

17e05

## FIG. 17e (cont.)

17e00



17e10

17e15

What type of amortization should we use?

This calculator provides the option to consider three types of loan amortization

- **Full Amortization:** loan payments will pay the loan balance in full at the end of the payment term.
- **Balloon:** loan balance will decrease based on the payment; however, the payment will **not** pay the loan balance in full at the end of the loan term. The payment you enter will consist of principal and interest. The calculator will determine the interest portion of the payment based on your input of payment term and the interest rate. A balloon term's payment is calculated as if the loan were to amortize over a longer time period than the length of the loan. The remaining principal is paid off when the balloon matures. For example, the payment is calculated to pay off in 30 years, but the loan is due in 5 years. In a Balloon loan with the balloon payment defined as **percent of loan**, the payment is calculated based on the percentage of the loan balance that is due at maturity. In a Balloon loan with the balloon payment defined as **specified amount**, the payment is calculated based on the remaining loan balance that is due at maturity
- **Interest Only:** The loan balance will **not** decrease based on the loan payment. The payment pays only the interest due on the loan. At the end of the loan term, the full loan principle amount will be due.

Do you want to calculate a payoff amount?

Enter a payment value, and the calculator will determine the value of the payoff amount

## FIG. 17e (cont.)

17e00

17e20

What is the first payment date?  
The information is used on the amortization schedule to provide you with payment dates. This field does not impact the calculations.

17e25

Do you want to calculate the interest rate inclusive of points and fees?  
Calculate the impact of points and fees as they relate to the interest rate. You may include points as a percentage of the loan and/or as an explicit amount. **Points** can include origination, discount or buy down. **Fees** can include appraisal, application, title, or other fees. The interest rate, including points, calculates the final value by reducing the loan amount by the point value and/or other fees.

**Mortgage Constant** is the annual debt service divided by the loan amount. It is an indication of how much principal is being paid in the first year, and as such, is an indicator of how quickly the loan may be paid off. The higher the value of the mortgage constant, the more quickly the loan is being paid off.

17e30

**Variable Rate Loans**  
This model assumes that the interest rate adjusts on regularly scheduled basis

How many periods before the first adjustment?  
Enter the number of periods from the loan date to the first adjustment date. You should refer to the payment frequency when answering this question. For example, if the payment frequency is quarterly and the rate

## **FIG. 17e (cont.)**

17e00

17e35

### **How many periods between adjustments?**

Enter the number of periods between adjustments.. If the payment frequency is quarterly and the rate adjusts every 2 years, you would enter 8.

17e40

### **Do you want to use the maximum rate adjustments? (worst-case scenario)**

Because of the inability to predict interest rates, this calculator allows you to simulate the maximum rate change for each adjustment date without exceeding the maximum rate allowed for the loan. Deselecting the checkmark displays additional fields for entering assumptions about future interest rate changes

17e45

### **What is the minimum rate?**

The minimum rate is sometimes referred to as the floor. Enter the lowest interest rate that could apply

17e50

### **What is the initial index value?**

Enter the initial rate of the index. Variable rate loans generally base the interest rate on an index like the prime rate of a major bank, for example.

## **FIG. 17e (cont.)**

17e00

17e55

### **What is the margin?**

The margin is the amount that is added to the index to establish the interest rate on each adjustment date. Variable rate loans generally include a margin or some other percentage above the index value

17e60

### **What do you predict will be the index change per adjustment?**

Enter the percent change that you predict will occur in the index in for the rate. You may enter a negative or a positive change. The calculator will increase the interest rate by this amount for each of the adjustment dates until the rate reaches the maximum or minimum interest rate allowed on the loan

17e65

Break Even is the point at which the cost of obtaining the new loan has been paid back by the decrease, if any, in the payments. In other words, the number of payments it takes to cover the points and fees you paid to refinance the mortgage.

17e70

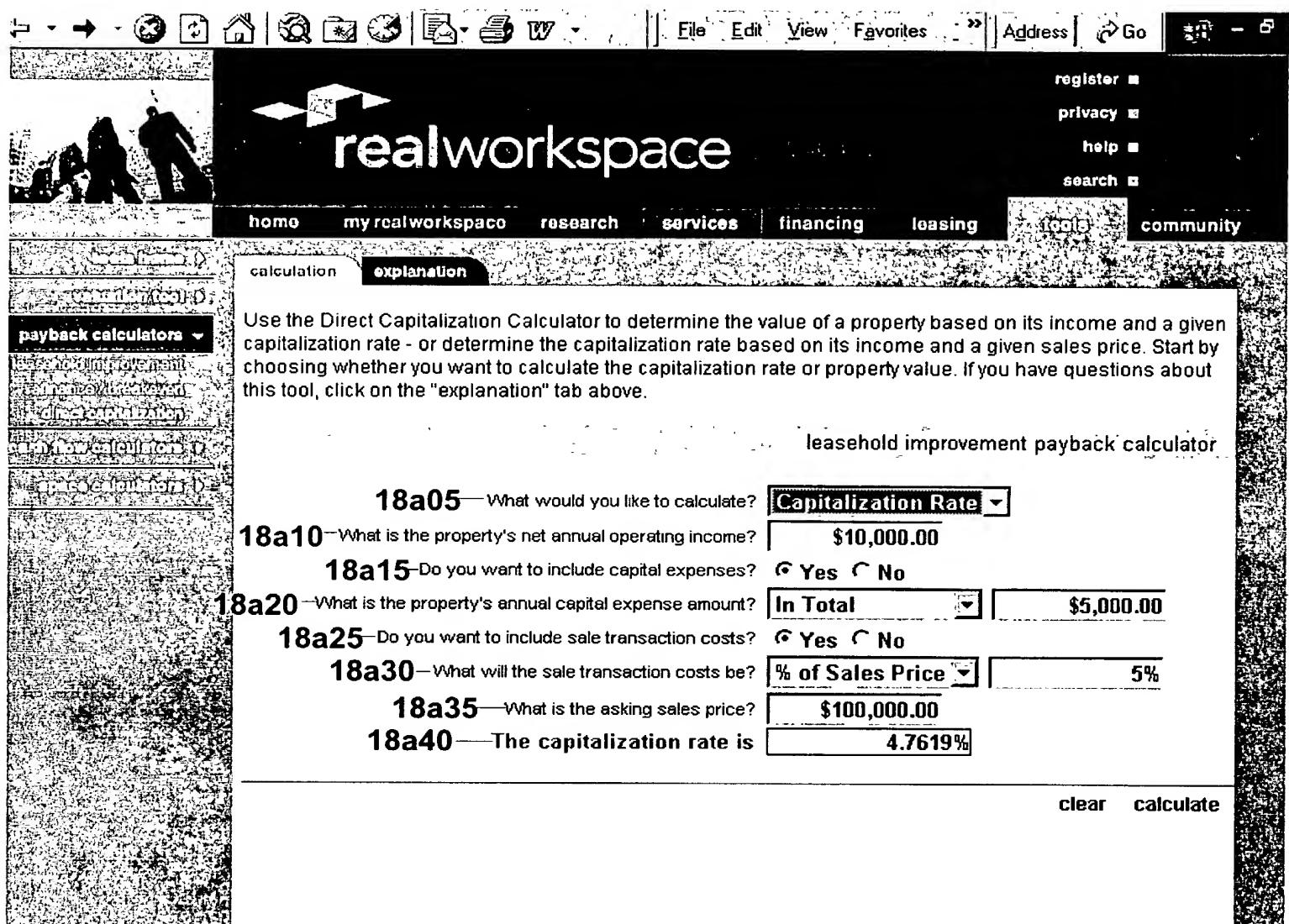
Savings/(Cost) is the amount of cash you will pay(cost) or save(savings) based on a comparison between the total payments remaining on the current loan to the total payments on the new loan

17e75

Present value tells you what the future payments are worth as cash today.

**FIG. 18a**

18a00



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calculation explanation

Use the Direct Capitalization Calculator to determine the value of a property based on its income and a given capitalization rate - or determine the capitalization rate based on its income and a given sales price. Start by choosing whether you want to calculate the capitalization rate or property value. If you have questions about this tool, click on the "explanation" tab above.

leasehold improvement payback calculator

**18a05** — What would you like to calculate? **Capitalization Rate**

**18a10** — What is the property's net annual operating income? **\$10,000.00**

**18a15** — Do you want to include capital expenses?  **Yes  No**

**18a20** — What is the property's annual capital expense amount? **In Total  \$5,000.00**

**18a25** — Do you want to include sale transaction costs?  **Yes  No**

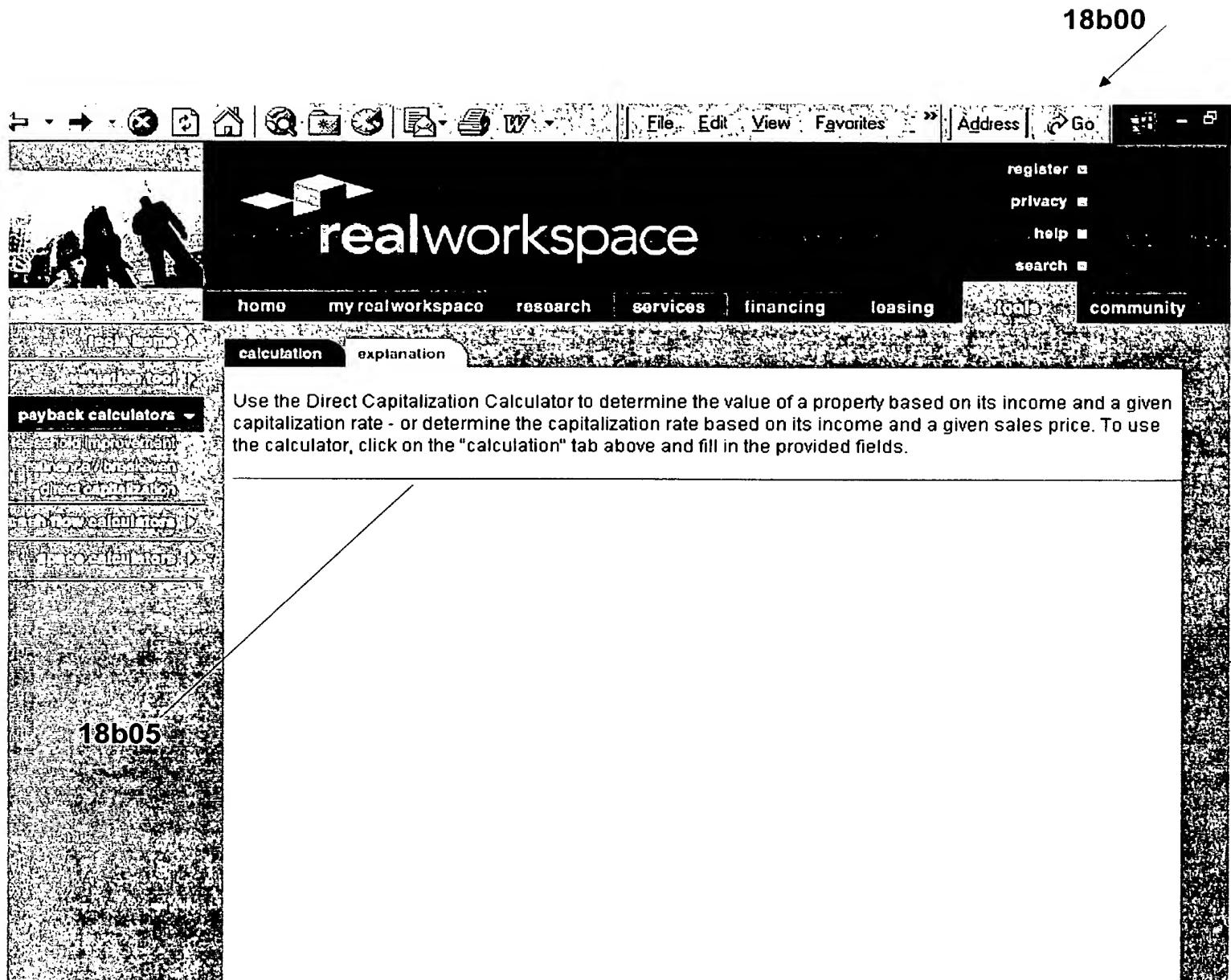
**18a30** — What will the sale transaction costs be? **% of Sales Price  5%**

**18a35** — What is the asking sales price? **\$100,000.00**

**18a40** — The capitalization rate is **4.7619%**

clear calculate

**FIG. 18b**



# FIG. 19a

19a00

This Mortgage Calculator calculates mortgage payments on a fixed or variable commercial loan, as well as the principal and interest payments over the term of the loan. Start by selecting from the pull-downs below. Next, fill in the fields and click "calculate." Select either the "schedule", "summary" or "graph" tabs above to view the results of your calculation. If you have questions about this tool, click on the "explanation" tab.

**mortgage calculator**

19a05      What should we calculate? **Payment**

19a10      What type of mortgage are you considering? **Fixed Rate**

19a15      What type of amortization should we use? **Full Amortization**

19a20      What is the loan amount? **\$100,000.00**

19a25      What is the interest rate? **8%**

19a30      What is the loan term? **30 Years**

19a35      What is the payment frequency? **Monthly**

19a40      What is the first payment date? **December 2000**

19a45      Payment: **\$733.77**

19a50      Mortgage constant: **8.80524%**

19a55      Annual payment: **\$8,805.24**

19a60      Do you want to calculate a payoff amount?  Yes  No

19a65      After how many payments should we show payoff? **100**

19a70      Payoff amount: **\$90,504.36**

19a75      Do you want to calculate the interest rate inclusive of points and fees?  Yes  No

19a80      What points and fees will be paid as a percentage? **5%**

19a85      What fees will be paid as an amount? **\$1,000.00**

19a90      Rate with points included: **8.66456%**

clear calculate

**FIG. 19b**

19b00

realworkspace

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calculation summary graph explanation

This schedule view provides monthly details of your mortgage, including the interest you've paid and the remaining principal owed. To display an annual summary of your mortgage or a graphic view of the results, click on the "summary" or "graph" tabs above. If you have questions about this tool, click on the "explanation" tab.

mortgage calculator

Loan Amount: \$100,000.00

Term: Monthly over 30 Years

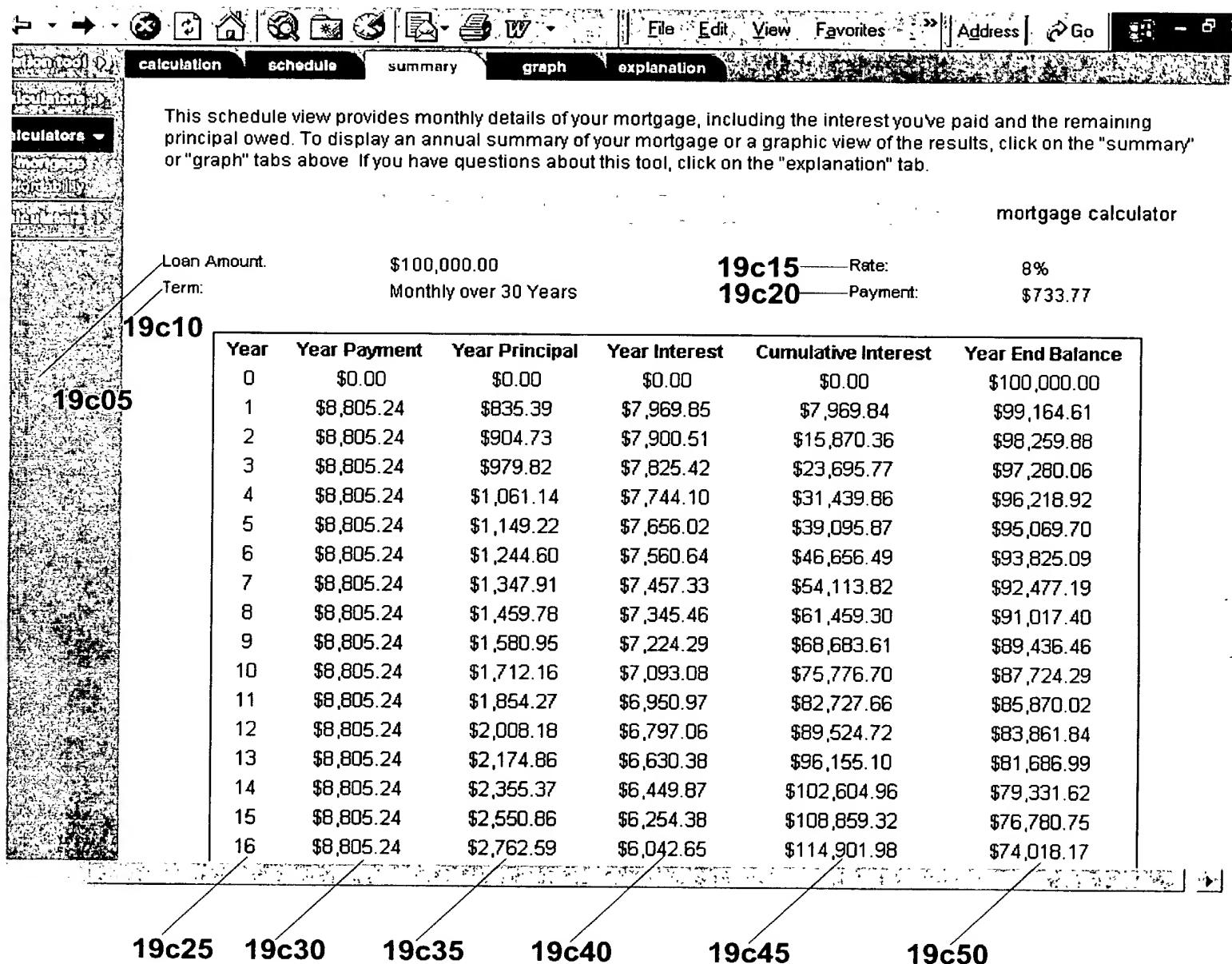
19b15 Rate: 8%  
19b20 Payment: \$733.77

Period	Date	Payment	Principal	Interest	Cumulative Interest	Balance
0	11/2000	\$0.00	\$0.00	\$0.00	\$0.00	\$100,000.00
1	12/2000	\$733.77	\$67.10	\$666.67	\$666.67	\$99,932.90
2	01/2001	\$733.77	\$67.55	\$666.22	\$1,332.89	\$99,865.35
3	02/2001	\$733.77	\$68.00	\$665.77	\$1,998.66	\$99,797.36
4	03/2001	\$733.77	\$68.45	\$665.32	\$2,663.98	\$99,728.90
5	04/2001	\$733.77	\$68.91	\$664.86	\$3,328.84	\$99,660.00
6	05/2001	\$733.77	\$69.37	\$664.40	\$3,993.24	\$99,590.63
7	06/2001	\$733.77	\$69.83	\$663.94	\$4,657.18	\$99,520.80
8	07/2001	\$733.77	\$70.29	\$663.48	\$5,320.66	\$99,450.51
9	08/2001	\$733.77	\$70.76	\$663.01	\$5,983.67	\$99,379.74
10	09/2001	\$733.77	\$71.24	\$662.53	\$6,646.20	\$99,308.51

19b25 19b30 19b35 19b40 19b45 19b50 19b55

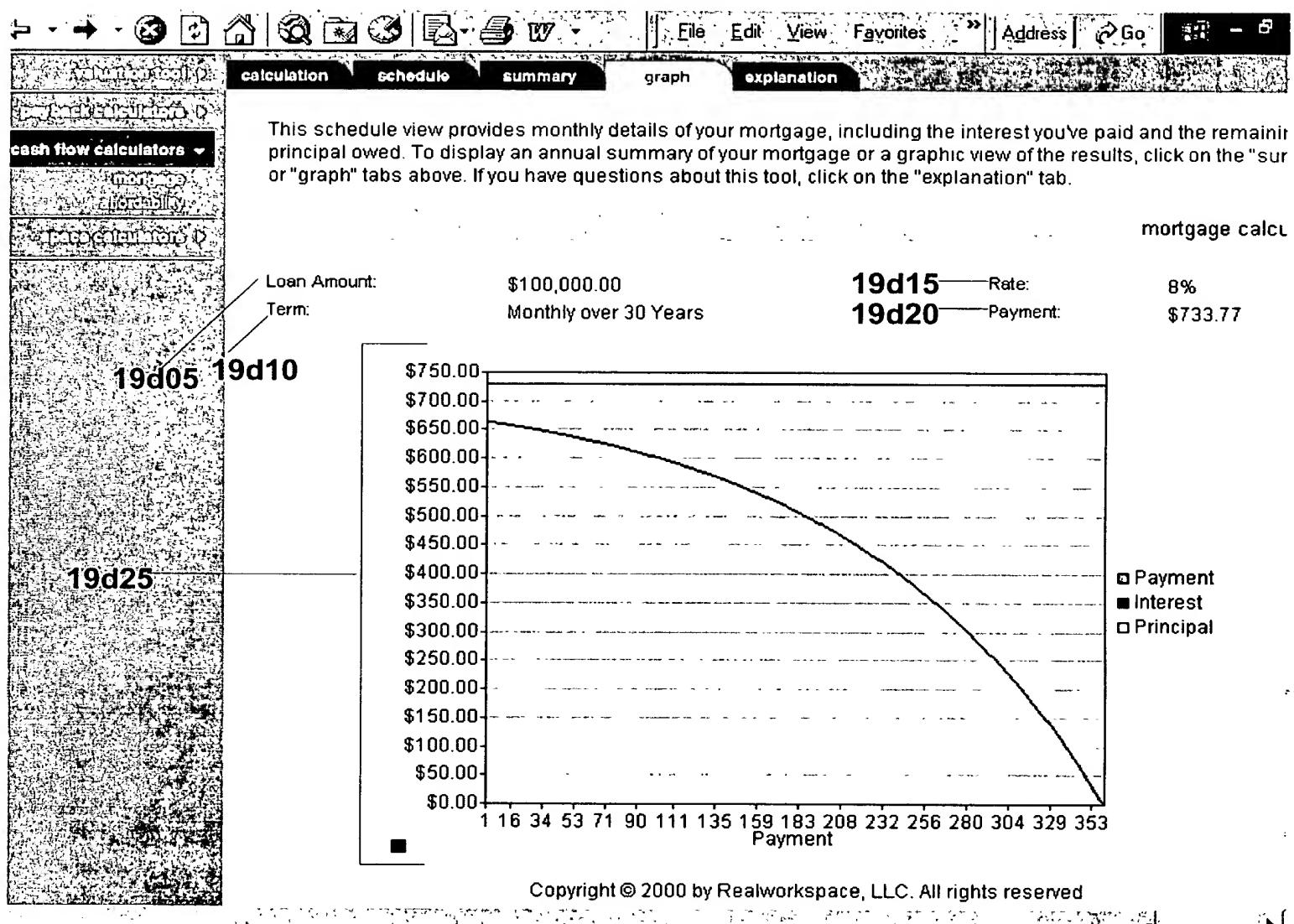
## FIG. 19c

19c00



## FIG. 19d

19d00



# FIG. 19e

19e00

Use the Mortgage calculator to enter mortgage data associated with the property. Below, each of the questions on this screen is discussed in detail.

Calculate loan amount, interest rate, payment amount or term. All the fields that appear on the screen are required. The fields that are being calculated for you are shown in red.

**note:** *This calculator assumes monthly compounding. This calculator does not consider private mortgage insurance (PMI), insurance, homeowners costs or tax implications.*

---

**What type of mortgage are you considering?**

You may choose either of two different types of mortgage rates, variable or fixed.

- **Fixed rate:** interest rate remains constant for the term of the loan
- **Variable rate:** interest rate changes over the term of the loan. The calculator assumes that the rate will be based on an index with scheduled rate changes, that is, after a specified number of periods and with a specified number of periods between adjustments. While it is not possible to know what the interest will be after an adjustment, this calculator allows you to simulate scenarios based on your assumptions. For further information, refer to the Variable Rate Loan section below.

## **FIG. 19e (cont.)**

**19e00**



What type of amortization should we use?

This calculator provides the option to consider three types of loan amortization

**19e10**

- **Full Amortization:** loan payments will pay the loan balance in full at the end of the payment term.
- **Balloon:** loan balance will decrease based on the payment; however, the payment will **not** pay the loan balance in full at the end of the loan term. The payment you enter will consist of principal and interest. The calculator will determine the interest portion of the payment based on your input of payment term and the interest rate. A balloon term's payment is calculated as if the loan were to amortize over a longer time period than the length of the loan. The remaining principal is paid off when the balloon matures. For example, the payment is calculated to pay off in 30 years, but the loan is due in 5 years. In a Balloon loan with the balloon payment defined as **percent of loan**, the payment is calculated based on the percentage of the loan balance that is due at maturity. In a Balloon loan with the balloon payment defined as **specified amount**, the payment is calculated based on the remaining loan balance that is due at maturity.
- **Interest Only:** The loan balance will **not** decrease based on the loan payment. The payment pays only the interest due on the loan. At the end of the loan term, the full loan principle amount will be due.

---

**19e15**

**Do you want to calculate a payoff amount?**

Enter a payment value, and the calculator will determine the value of the payoff amount.

## FIG. 19e (cont.)

19e00

What is the first payment date?

19e20

The information is used on the amortization schedule to provide you with payment dates. This field does not impact the calculations.

---

Do you want to calculate the interest rate inclusive of points and fees?

Calculate the impact of points and fees as they relate to the interest rate. You may include points as a percentage of the loan and/or as an explicit amount. **Points** can include origination, discount or buy down. **Fees** can include appraisal, application, title, or other fees. The interest rate, including points, calculates the final value by reducing the loan amount by the point value and/or other fees.

**Mortgage Constant** is the annual debt service divided by the loan amount. It is an indication of how much principal is being paid in the first year, and as such, is an indicator of how quickly the loan may be paid off. The higher the value of the mortgage constant, the more quickly the loan is being paid off.

---

### Variable Rate Loans

19e25

This model assumes that the interest rate adjusts on regularly scheduled basis.

19e30

How many periods before the first adjustment?

Enter the number of periods from the loan date to the first adjustment date. You should refer to the payment frequency when answering this question. For example, if the payment frequency is quarterly and the rate adjusts annually, you enter 4.

## **FIG. 19e (cont.)**

19e00

19e35 **How many periods between adjustments?**  
Enter the number of periods between adjustments.. If the payment frequency is quarterly and the rate adjusts every 2 years, you would enter 8.

19e40 **Do you want to use the maximum rate adjustments? (worst-case scenario)**  
Because of the inability to predict interest rates, this calculator allows you to simulate the maximum rate change for each adjustment date without exceeding the maximum rate allowed for the loan. Deselecting the checkmark displays additional fields for entering assumptions about future interest rate changes.

19e45 **What is the minimum rate?**  
The minimum rate is sometimes referred to as the floor. Enter the lowest interest rate that could apply.

19e50 **What is the initial index value?**  
Enter the initial rate of the index. Variable rate loans generally base the interest rate on an index like the prime rate of a major bank, for example.

## **FIG. 19e (cont.)**

**19e00**

Calculator

http://www.ohio.edu/itc/19e/19e00.htm

**What is the minimum rate?**

The minimum rate is sometimes referred to as the floor. Enter the lowest interest rate that could apply.

**What is the initial index value?**

Enter the initial rate of the index. Variable rate loans generally base the interest rate on an index like the prime rate of a major bank, for example.

**What is the margin?**

The margin is the amount that is added to the index to establish the interest rate on each adjustment date. Variable rate loans generally include a margin or some other percentage above the index value.

**What do you predict will be the index change per adjustment?**

Enter the percent change that you predict will occur in the index in for the rate. You may enter a negative or a positive change. The calculator will increase the interest rate by this amount for each of the adjustment dates until the rate reaches the maximum or minimum interest rate allowed on the loan.

FIG. 20a

20a00

This screenshot shows the 'realworkspace' website's affordability calculator page. The page includes a navigation bar with links for 'register', 'privacy', 'help', 'search', 'home', 'my realworkspace', 'research', 'services', 'financing', 'leasing', 'tools', and 'community'. The main content area features a heading 'affordability calculator' and a descriptive text block. Below this, there are two tabs: 'calculation' (which is selected) and 'explanation'. A large text area provides instructions for using the calculator. The 'Calculation' section contains input fields for property type, annual net operating income, annual debt service, loan amount, property value required, and capitalization rate. The 'Assumptions' section contains input fields for debt service coverage, payment frequency, loan term, interest rate, and loan-to-value ratio. At the bottom, there is a link to current market rates and ratios, and a 'clear' button.

realworkspace

register  privacy  help  search

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calculation explanation

This Affordability Calculator will help you determine the size of the commercial real estate loan you can afford by calculating the loan amount based on Net Operating Income (NOI) and basic underwriting criteria. Start by selecting the property type you are interested in below. Next, enter your information into the appropriate fields, then click "calculate" for the results. If you have questions about this tool, click on the "explanation" tab.

affordability calculator

**Calculation**

Enter one of the inputs below, and the remaining fields will be calculated based on the assumptions.

**20a05** Property Type

**20a10** Annual Net Operating Income

**20a15** Annual Debt Service

**20a20** Loan Amount

**20a25** Property Value Required

**20a30** Capitalization Rate (NOI/Property Value)

**clear** **calculate**

**Assumptions**

**20a35** Debt Service Coverage

**20a40** Payment Frequency

**20a45** Loan Term

**20a50** Interest Rate

**20a55** Loan-to-Value Ratio

[Click here for current market rates and ratios](#)

**clear**

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**FIG. 20b**

20b00

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calculation explanation

**What is the loan amount that a property could support based on Net Operating Income (NOI) and basic underwriting assumptions?**

The Affordability Calculator allows you to match underwriting assumptions with your property performance as measured, for example, by net operating income. If you enter one performance measurement, the system will calculate the other performance requirements based on the underwriting assumptions that you have entered.

**Debt Service Coverage:**

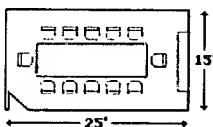
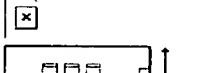
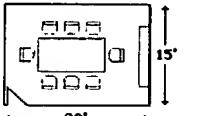
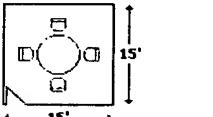
Debt Service Coverage is the amount by which your income exceeds your debt payment. For example if your annual income is \$1,200 and the debt service coverage is 1.2%, then your annual debt payment can be up to \$1,000.00.

Annual debt service is a term sometimes used to describe annual debt payment.

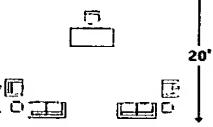
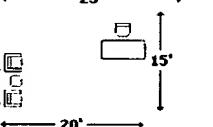
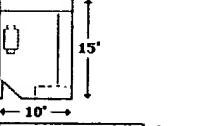
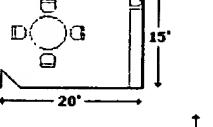
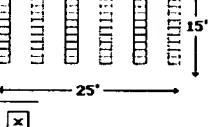
# FIG. 21a (cont.)

21a15

Do you want to include Conference Rooms in your estimate?  Yes  No — **21a15**

Conference Rooms		Fill in the total number of Conference Rooms required.				
Description		Length x Width = Total S.F. Capacity				
		(feet)	(feet)			
Board Room		25 ft	15'	$= 375 \text{ sqft}$	12	<input type="text" value="0"/> Total Units
Large Conference Room		20 ft	20'	$= 400 \text{ sqft}$	10	<input type="text" value="0"/> Total Units
Small Conference Room		20 ft	15'	$= 300 \text{ sqft}$	8	<input type="text" value="0"/> Total Units
Small Meeting Room		15 ft	15'	$= 225 \text{ sqft}$	4	<input type="text" value="0"/> Total Units

Do you want to include Support Common Areas in your estimate?  Yes  No — **21a20**

Support Common Areas		Fill in the total number of Support Common Areas required.				
Description		Length x Width = Total S.F. Capacity				
		(feet)	(feet)			
Large Reception Area		25 ft	20'	$= 500 \text{ sqft}$	<input type="text" value="0"/> Total Units	
Small Reception Area		20 ft	15'	$= 300 \text{ sqft}$	<input type="text" value="0"/> Total Units	
Print/Copy Room		10 ft	15'	$= 150 \text{ sqft}$	<input type="text" value="0"/> Total Units	
Break Room		20 ft	15'	$= 300 \text{ sqft}$	<input type="text" value="0"/> Total Units	
Library/File Storage		25 ft	15'	$= 375 \text{ sqft}$	<input type="text" value="0"/> Total Units	
Equipment Room		10 ft	15'	$= 150 \text{ sqft}$	<input type="text" value="0"/> Total Units	
Training Room		20 ft	20'	$= 400 \text{ sqft}$	10	<input type="text" value="0"/> Total Units
Mail Room		20 ft	15'	$= 300 \text{ sqft}$	<input type="text" value="0"/> Total Units	

# FIG. 21a

21a00



To determine your office space needs, enter the number of offices, cubicles, meeting rooms and common areas in the fields below. You can plan for future growth as well - simply list the number of years you plan to occupy this space. If you have questions about this tool, click on the "explanation" tab.

space calculator

Do you want to include Offices in your estimate?  Yes  No — 21a05

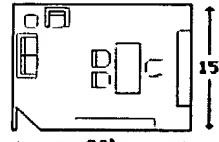
**Offices** Fill in the total number of Offices required.

**Description**

**Length x Width = Total S.F.**

(feet) (feet)

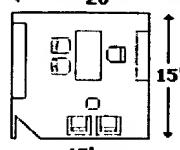
CEO



20 ft x 15 ft = 300 sqft

0 Total Units

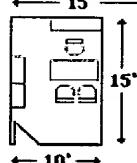
Partner



15 ft x 15 ft = 225 sqft

0 Total Units

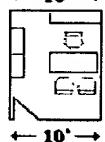
Director



10 ft x 15 ft = 150 sqft

0 Total Units

Manager



10 ft x 12 ft = 120 sqft

0 Total Units

Do you want to include Cubicles in your estimate?  Yes  No — 21a10

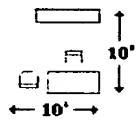
**Cubicles** Fill in the total number of Cubicles required.

**Description**

**Length x Width = Total S.F.**

(feet) (feet)

Supervisor



10 ft x 10 ft = 100 sqft

0 Total Units

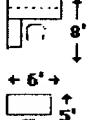
Large Cube



8 ft x 8 ft = 64 sqft

0 Total Units

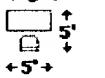
Medium Cube



6 ft x 8 ft = 48 sqft

0 Total Units

Small Cube



5 ft x 5 ft = 25 sqft

0 Total Units

## FIG. 21a (cont.)

21a00

21a25

Circulation and Add-On Factors	
Circulation Area	<input type="text" value="30%"/>
Add-On Factor	<input type="text" value="15%"/>

21a30

Space Planning Hints	
<ul style="list-style-type: none"><li>• The hallways between offices, workstations, etc.</li><li>• Typically adds 25% to 55%.</li></ul>	
<ul style="list-style-type: none"><li>• Common Areas used by all building tenants including lobbies, corridors, restrooms, service facilities, etc.</li><li>• Typically adds 0% to 50%.</li></ul>	

Future Growth Assumptions

Number of growth years to include in your estimate?

**clear calculate**

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# FIG. 21b

21b00

Future Growth Assumptions

Number of growth years to include in your estimate?

Year	Growth Rate (%)	Growth Rate
1	<input type="text" value="5%"/>	<a href="#">Apply down</a>
2	<input type="text" value="5%"/>	<a href="#">Apply down</a>
3	<input type="text" value="5%"/>	<a href="#">Apply down</a>
4	<input type="text" value="0%"/>	<a href="#">Apply down</a>
5	<input type="text" value="0%"/>	<a href="#">Apply down</a>
6	<input type="text" value="0%"/>	<a href="#">Apply down</a>
7	<input type="text" value="0%"/>	<a href="#">Apply down</a>
8	<input type="text" value="0%"/>	<a href="#">Apply down</a>
9	<input type="text" value="0%"/>	<a href="#">Apply down</a>
10	<input type="text" value="0%"/>	<a href="#">Apply down</a>

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# FIG. 21c

21c00

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calculation summary graph explanation

Here are the results of your space planning calculation. For a graphic view, click on "graph" above. If you have questions about this tool, click on the "explanation" tab.

space calculator

Quantity	Space Description	Sq. Ft per Unit	Total Space
<b>Offices</b>			
10	CEO	300 sqft	3,000 sqft
0	Partner	225 sqft	0 sqft
0	Director	150 sqft	0 sqft
0	Manager	120 sqft	0 sqft
<b>Subtotal</b>			<b>3,000 sqft</b>
<b>Cubicles</b>			
0	Supervisor	100 sqft	0 sqft
10	Large Cube	64 sqft	640 sqft
0	Medium Cube	48 sqft	0 sqft
0	Small Cube	25 sqft	0 sqft
<b>Subtotal</b>			<b>640 sqft</b>
<b>Conference Rooms</b>			
10	Board Room	375 sqft	3,750 sqft
0	Large Conference Room	400 sqft	0 sqft
0	Small Conference Room	300 sqft	0 sqft
0	Small Meeting Room	225 sqft	0 sqft
<b>Subtotal</b>			<b>3,750 sqft</b>
<b>Support Common Areas</b>			
10	Large Reception Area	500 sqft	5,000 sqft
0	Small Reception Area	300 sqft	0 sqft
0	Print/Copy Room	150 sqft	0 sqft
0	Break Room	300 sqft	0 sqft
0	Library/File Storage	375 sqft	0 sqft
0	Equipment Room	150 sqft	0 sqft
0	Training Room	400 sqft	0 sqft
0	Mail Room	300 sqft	0 sqft
<b>Subtotal</b>			<b>5,000 sqft</b>
<b>Subtotal for All Areas</b>			
			<b>12,390 sqft</b>
Circulation Area			<b>3,717 sqft</b>
Total Usable Square Feet			<b>16,107 sqft</b>
Add-On Factor			<b>2,416 sqft</b>
Total Rentable Square Feet			<b>18,523 sqft</b>
<b>Total Space Required over Lease Term</b>			<b>18,523 sqft</b>

21c05

21c10

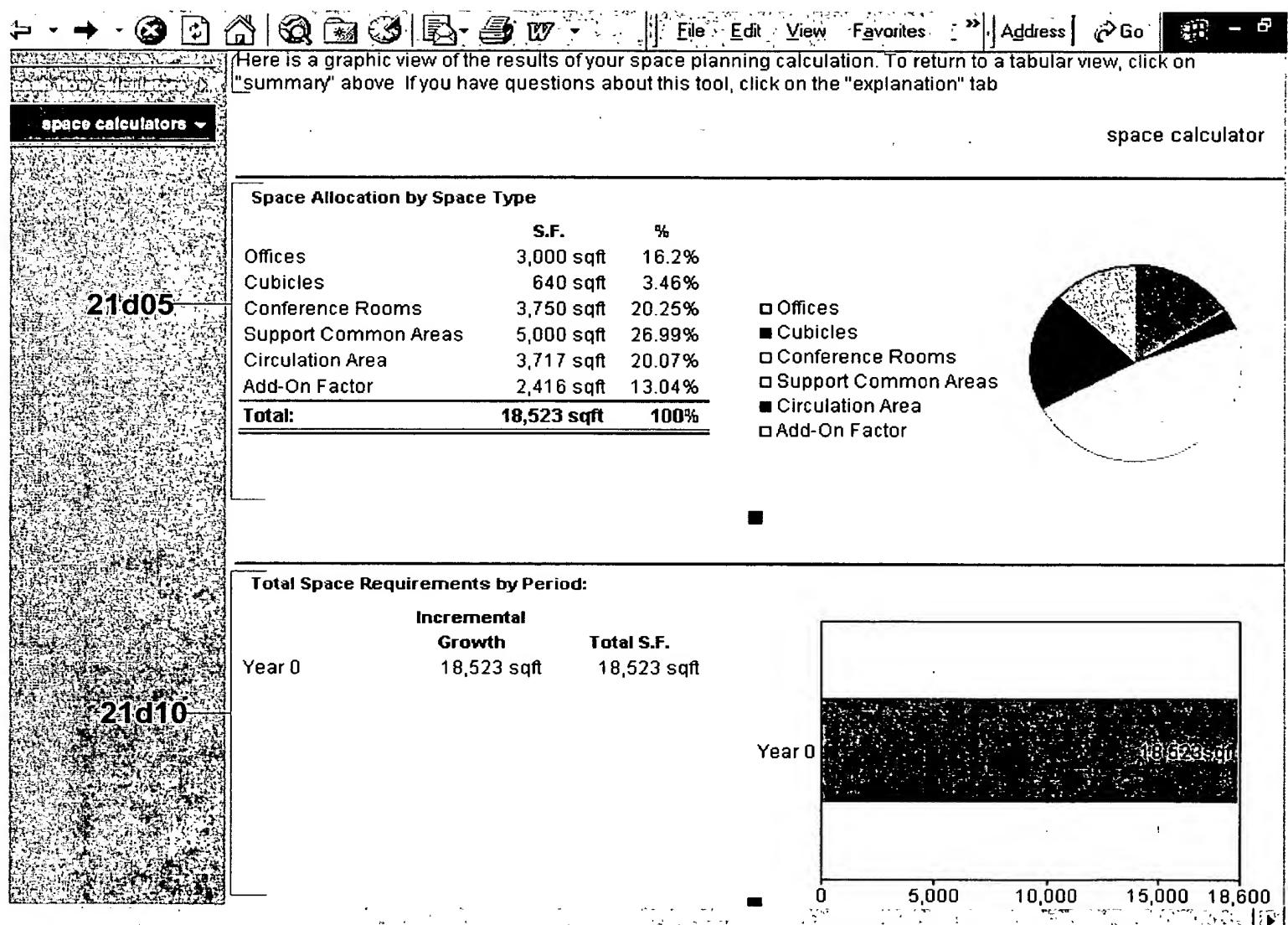
21c15

21c20

21c25

# FIG. 21d

21d00



**FIG. 21e**

21e00

